Albuquerque trio wins Supercomputing Challenge

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Erika DeBenedictis wins for third time

LOS ALAMOS, New Mexico, April 21, 2009— Erika DeBenedictis, Tony Huang, and Chris Hong from La Cueva High School in Albuquerque captured the top prize Tuesday in the 2009 New Mexico Supercomputing Challenge hosted by Los Alamos National Laboratory. This is DeBenedictis' third first-place win in the Challenge and Huang's second.

The winning team's project, "A Novel Approach to Asteroid Identification Using Image Processing of Existing Data," earned each student a $1,000 check. The students used computer simulations to model the orbits of asteroids in the solar system to provide suitable warning should an asteroid approach Earth.

The project, for which DeBenedictis' father, Erik DeBenedictis, served as team mentor, also won the Best Written Report award from the Society for Technical Communication and the Computational Science Award. Both of these awards are for $100. The students also took home the Cray, Inc. High Performance Award.

The Supercomputing Challenge is open to any New Mexico high-school or middle-school student. More than 320 students from 25 schools around the state spent the school year researching scientific problems, developing sophisticated computer programs, and learning about computer science with mentors from the state's national laboratories and other organizations.

The goal of the yearlong event is to teach teams of middle- and high-school students how to use powerful computers to analyze, model, and solve real-world problems. Participating students improve their understanding of technology by developing skills in scientific inquiry, modeling, computing, communications, and teamwork.

Second prize went to Kristin Cordwell and Chen Zhao of Albuquerque's Manzano High School. The students were awarded $500 each for their project, "Elliptic Curve Computations," which used a new method for point multiplication on elliptic curves. The project also won the Best Internet Research Prize and a $500 cash award from the New Mexico Council for Higher Education Computing/Communication Service (CHECS). Cordwell and Zhao's teacher is Steve Schum and their mentor is Cordwell's father, William Cordwell.

Cordwell, who won the Challenge in 2006 and 2007, also received a $100 award from the New Mexico Network for Women in Science and Engineering. The certificate reads, "Recognizing your potential for a career in mathematics."

Rachel Robey and Gabe Montoya of Los Alamos Middle School took third place with a project called "Energy Efficiency Through Smart Wall Design." They received $250 each. Their teacher is Bob Dryja and their mentors are Bob Robey and Derrick Montoya.

Students presented their research to a team of volunteer judges on Monday at the Lab's J. Robert Oppenheimer Study Center and discussed poster displays of their computing projects. They also toured the Laboratory's supercomputing centers and heard talks and saw demonstrations by Laboratory researchers.

To read a list of other Supercomputing Challenge award winners, go to http://www.challenge.nm.org/archive/08-09/expo/winners.shtml. To read the final student reports, go to http://www.challenge.nm.org/finalreports.

A total of $63,000 in individual scholarships — $50,000 from Los Alamos' Computer, Computational, and Statistical Sciences Division — also were awarded on Tuesday at Los Alamos.

The Supercomputing Challenge is sponsored by Los Alamos and Sandia national laboratories and the state of New Mexico.

Educational Partners include CHECS, Eastern New Mexico University, MIT StarLogo, New Mexico Highlands University, New Mexico Institute of Mining and Technology, Northern New Mexico College, New Mexico Public Education Department, New Mexico State University, San Juan College, Santa Fe Community College, Santa Fe Institute, Tennessee State University, and the University of New Mexico.

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